

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Reliability and Continuity of Communications)	PS Docket No. 11-60
Networks, Including Broadband Technologies)	
)	
)	

COMMENTS OF FRONTIER COMMUNICATIONS CORPORATION

I. INTRODUCTION

Frontier Communications Corporation (“Frontier”) hereby submits the following comments in response to the Federal Communications Commission’s (“Commission” or “FCC”) request for comment on its July 18, 2012 *Public Notice*.¹ The *PN* seeks comment on 911 resiliency and reliability following the June 29, 2012, derecho storm that affected the central, mid-Atlantic and northeastern United States. As the Commission notes, the derecho storm affected an enormous swath of the United States with West Virginia, which is primarily a Frontier service territory, sustaining particularly devastating damage.

Frontier is fully committed to serving the public interest, particularly in times of emergency such as the aftermath of the derecho. The scale and scope of the storm provided significant challenges that affected 9-1-1 communications immediately following the storm. Frontier has been in close communication with the Commission via its Network Outage Reporting System

¹ *In re: Public Safety and Homeland Security Bureau Seeks Comment on 9-1-1 Resiliency and Reliability in Wake of June 29, 2012, Derecho Storm in Central, Mid-Atlantic, and Northeastern United States*, PS Dkt. No. 11-60, *Public Notice*, DA 12-1153 (rel. Jul. 18, 2012) (“*Public Notice*” or “*PN*”).

(“NORS”)² during and after the storm; we write now to offer further information on Frontier’s experience responding to this extraordinary event and lessons learned for 9-1-1 resiliency and reliability.

II. THE STORM PRODUCED UNPRECEDENTED DAMAGE THROUGHOUT THE STATE OF WEST VIRGINIA

When the derecho passed through West Virginia it left devastation in its wake. In requesting federal assistance to deal with the storm’s aftermath, West Virginia Governor Earl Ray Tomblin explained that “[t]he storms were unlike any weather event we’d ever faced, and they affected nearly every family and business in West Virginia. People across the Mountain State had damage to structures and lost food, wages and medicine.”³ The storm caused “unprecedented power outages and damage,” with the effects lasting for weeks.⁴ Indeed 688,000 West Virginia customers were without power immediately following the storm and one week later nearly 200,000 customers still lacked a reliable source of electricity.⁵

The massive statewide power outages, along with other storm destruction, in turn caused disruption in Frontier’s communication network, including 9-1-1 service in areas of the state. In the days immediately following the storm, 126 of Frontier’s 230 wire centers in West Virginia—over half—were operating on generator-based power. Additionally, there were 192 generators

² The Network Outage Reporting System (“NORS”) is “NORS is the web-based filing system through which communications providers covered by the Part 4 reporting rules submit reports to the FCC.” See FCC, Network Outage Reporting System, *available at* <http://transition.fcc.gov/pshs/services/cip/nors/nors.html>.

³ Press Release, West Virginia Division of Homeland Security and Emergency Management, Governor Tomblin Requests Individual Assistance from Federal Government (July 2012) *available at* http://www.dhsem.wv.gov/news/Pages/IndividualAssistance_July2012.aspx

⁴ Press Release, Office of Governor Earl Ray Tomblin, Governor Tomblin Announces Storm Response Review, (Jul. 11, 2012) *available at*: <http://www.governor.wv.gov/media/pressreleases/2012/Pages/GOVERNORTOMBLINDECLARESSTATEWIDESTATEOFEMERGENCY.aspx>

⁵ *Id.*

powering remote sites throughout the state. This type of large scale power outage redefined an “extraordinary” event in West Virginia.⁶

Frontier had in place, and on file with the West Virginia Public Service Commission, a Major Service Interruption Contingency Plan, aimed particularly at emergency services and 9-1-1 restoral.⁷ Implementing this plan, which consists “of guidelines designed to assist Frontier management and employees in major service interruptions,” helped to maintain service levels across the state despite the damage.⁸ Yet the unique nature of this storm also requires flexibility to deal with the unexpected, and cautions against adopting overly rigid plans for unexpected events.

Immediately following the storm, Frontier designated an experienced emergency services team to work around the clock with the fifty 9-1-1 centers it serves in West Virginia. Frontier’s technicians, too, worked around the clock. Frontier reassigned all technicians and contractors and committed its full complement of employees and contractors to restoration efforts. Frontier also brought in an additional 40 technicians from the surrounding states of Pennsylvania and New York to assist with the restoration efforts. In all, Frontier believes that its West Virginia network performed with a high level of reliability and resiliency given the nature of the destruction,⁹ yet Frontier did experience customer outages and impacts—both with its emergency services customers and the general public—and Frontier is applying the lessons learned from those issues to ensure an even greater level of resiliency and reliability in its network.

⁶ See *Public Notice* at pg. 4 (questioning the extent to which the derecho was an “extraordinary event”).

⁷ See Letter from Angela McCall, Frontier Communications, to Sandra Squire, WV Public Service Comm’n, WV PSC Dkt. No. 10-1604-T-GI, (Aug. 2, 2011).

⁸ *Id.* at 1.

⁹ Frontier acquired the majority of its West Virginia service territory from Verizon in July 2010. Since then Frontier has invested over \$200 million to improve the existing network and deploy broadband across the state.

III. THE STORM'S EFFECTS ON 9-1-1 CAPABILITIES

The derecho impacted 27 public safety answering points ("PSAPs") in West Virginia, with outage times ranging from a few hours to a few days; in either case any PSAP outage is of the utmost concern to Frontier. As part of its commitment to maintaining critical communications in times of emergency, Frontier has conducted a thorough internal analysis of the causes of the impacts on the PSAPs, with the goal of preventing such occurrences in the future. The lack of commercial power was the predominant cause of PSAP interruptions, both because it affected Frontier's ability to provide communications services, and also because it affected the ability of the PSAPs to use their own equipment. The storm created tremendous challenges for Frontier in restoring and sustaining power to Central Offices and other critical communications facilities. In addition to power-related problems, a small number of the PSAPs were impacted by storm-related issues, such as cable cuts caused by downed trees. In the days immediately following the derecho one PSAP was affected by a downed line due to a car accident.

A. Systemic Power Outages Hampered Network Reliability

As noted above, over half of the Frontier's wire centers in West Virginia lacked access to commercial power and hundreds more of its remote terminals also lacked a commercial power supply. During these power outages, Frontier maintained power at its central offices and remote terminals by on-site batteries. If the batteries ran out before power was restored, temporary power was supplied by on-site and portable generators.

Generator-use, however, was not a foolproof solution. The statewide power outages also cut off the supply of gasoline at many gas stations, making it difficult to find an adequate supply of gas to power all of the back-up generators. In some instances back-up generators pre-placed in the Central Offices failed, which led to outages while Frontier replaced those generators.

Replacement efforts included bringing in generators from out-of-state because all of the other generators in the area were already in use. The theft of generators from Frontier's terminals following the storm further hindered Frontier's ability to maintain a consistent power supply. Twenty generators were stolen from different Frontier facilities after the derecho and only five were recovered through West Virginia State Police intervention. In total, the problems maintaining power in the network led to impacts at 12 PSAPs across the state.

Simultaneously, many PSAPs experienced their own power issues, two due to lightning strikes, which did not allow them to perform their functions properly. As commercial power was restored, power surges then created problems with many PSAPs' Customer Premise Equipment ("CPE").

B. Physical Damage from the Derecho Resulted in Problems in the Network

The extremely high winds associated with the derecho, including tree falls, resulted in significant damage statewide. In addition to the power outages described above, the physical damage also led to cable cuts on hundreds of local distribution routes and some of Frontier's major backhaul fiber routes were also disrupted. The disruptions on Frontier's major transport facilities led to lost visibility and remote access to some parts of the network, which in turn resulted in communication impacts to some PSAPs. Some technical glitches also hampered PSAP communications.

C. The Unexpected Also Impacted PSAP Communications

One PSAP communication issue in the days shortly following the derecho was caused by a traffic accident occurring near a PSAP, which took down entrance facilities and rendered the

PSAP inaccessible. Initial 9-1-1 calls could not connect to this PSAP and the calls had to be rerouted once Frontier established manual translations.

IV. FRONTIER RESPONDED TO RESTORE EMERGENCY COMMUNICATIONS AND IS IMPLEMENTING ADDITIONAL BEST PRACTICES AS A RESULT OF ITS EXPERIENCE

When the derecho struck, Frontier took immediate action to reestablish communications with the PSAPs throughout the state. Frontier created command posts, opened call bridges to assess the situation and plan corrective action, and immediately deployed technicians to the field to restore damaged network elements. Because of fiber cuts that resulted in lost network visibility, Frontier's Network Operation Centers ("NOCs") coordinated with the field to obtain network access via its dial-up network. Once the NOCs obtained access, they began to restore lost 9-1-1 service for PSAP's which required manual call re-routing. Throughout the event, Frontier implemented its 9-1-1 disaster plans, which consisted of: (1) automatic overflow to administrative lines; (2) Remote Make Busy (RMB) circuit activation to reroute 9-1-1 calls to planned backup facilities; and (3) manual rerouting of 9-1-1 calls by Frontier Translations personnel. Many of the West Virginia PSAPs have primary and secondary reroute plans on file with Frontier for such an emergency and these reroute plans were implemented. These experiences demonstrated the need for continued coordination with PSAPs for emergency preparedness.

Frontier is committed to learning from the derecho's effects on crucial 9-1-1 facilities. Since the storm, Frontier is carefully studying its future actions based on lessons learned. Such actions may include but are not limited to:

- Enhancing preventative maintenance plans to include proactively testing its backup modems monthly.

- Performing quarterly checks via dial-up modems on host offices to ensure network reliability.
- Reviewing Frontier's network to determine where additional redundancy would be feasible.
- Adding additional remote access to Points of Presence ("POPs") to ensure increased visibility into the network.
- Prioritizing the 9-1-1 center sites and facilities for generator back-up.
- Revising and augmenting Frontier's generator plan.
- Establishing alternate dial-up access to key switches and exploring other backup options.

When combined with Frontier's preexisting procedures, Frontier is confident that these additional measures will help to ensure 9-1-1 reliability and resiliency.

V. CONCLUSION

Frontier has a deep commitment to the safety of all Americans and recognizes the critical need for reliable communications. A storm of the derecho's unprecedented magnitude put Frontier's emergency communications plans to the test. While the original storm was unpredictable, Frontier is committed to using the lessons learned from the resulting power and network outages in West Virginia to strengthen the reliability and resiliency of its complete network, with a particular focus on ensuring the viability of emergency communications. Frontier looks forward to maintaining close coordination with local PSAPs as well as the Commission while it implements procedures to enhance the maintenance of vital public safety communications.

Respectfully submitted,

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/s/

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